



Standard Test Methods for Rubber—Microcellular Urethane¹

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1. Scope

1.1 These test methods cover the preparation of a standard-size test sample and basic tests for physical property determinations of microcellular urethane rubber.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—There is no similar or equivalent ISO standard to these test methods.

2. Referenced Documents

2.1 ASTM Standards:

- D 256 Test Method for Determining the Izod Pendulum Impact Resistance of Plastics²
- D 395 Test Methods for Rubber Property—Compression Set³
- D 412 Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension³
- D 573 Test Method for Rubber—Deterioration in an Air Oven³
- D 575 Test Methods for Rubber Properties in Compression³
- D 624 Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers³
- D 790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials²
- D 1044 Test Method for Resistance of Transparent Plastics to Surface Abrasion²

¹ These test methods are under the jurisdiction of ASTM Committee D20 on Plastics and are the direct responsibility of Subcommittee D20.22 on Cellular Materials—Plastics and Elastomers.

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This revision includes addition of the following: an ISO equivalency statement, a material specifications statement, and a keywords section. Also, this revision now references another ASTM test method for the Ash Test.

² *Annual Book of ASTM Standards*, Vol 08.01.

³ *Annual Book of ASTM Standards*, Vol 09.01.

- D 1052 Test Method for Measuring Rubber Deterioration—Cut Growth Using Ross Flexing Apparatus³
- D 1630 Test Method for Rubber Property—Abrasion Resistance Footwear Abrader³
- D 1938 Test Method for Tear Propagation Resistance of Plastic Film and Thin Sheeting by a Single-Tear Method²
- D 2240 Test Method for Rubber Property—Durometer Hardness³
- D 2584 Test Method for Ignition Loss of Cured Reinforced Resins⁴
- D 2632 Test Method for Rubber Property—Resilience by Vertical Rebound³
- D 3040 Practice for Preparing Precision Statements for Standards Related to Rubber and Rubber Testing⁵
- D 3137 Test Method for Rubber Property—Hydrolytic Stability³
- D 3574 Test Methods for Flexible Cellular Materials—Slab, Bonded, and Molded Urethane Foams⁶
- D 3768 Test Method for Microcellular Urethanes—Flexural Recovery⁶
- D 3769 Test Method for Microcellular Urethanes—High-Temperature Sag⁶

3. Terminology

3.1 Description of Term Specific to This Standard:

3.1.1 *microcellular urethane*—a rubber material made by the interaction of a polyol and an organic isocyanate, having cell diameters in the range from 0.0001 to 0.001 mm, with a minimum density of 160 kg/m³ (10 lb/ft³).

4. Significance and Use

4.1 Tests made on materials herein prescribed can be of considerable value in comparing physical properties of different materials, in controlling manufacturing processes, and as a basis for writing specifications.

4.2 Before proceeding with these test methods, reference should be made to the specification of the material being tested. Any test specimen preparation, conditioning, or dimensions, or

⁴ *Annual Book of ASTM Standards*, Vol 08.02.

⁵ Discontinued—see 1987 *Annual Book of ASTM Standards*, Vols 09.01 and 09.02.

⁶ *Annual Book of ASTM Standards*, Vol 09.02.